

## APPENDIX G.

### Access to Capital for Business Formation and Success

Access to capital is one factor that researchers have examined when studying business formation and success. If race- or gender-based discrimination exists in capital markets, minorities and women may have difficulty acquiring the capital necessary to start, operate, or expand businesses.<sup>1,2</sup> Researchers have also found that the amount of startup capital can affect long-term business success, and, on average, minority- and women-owned businesses appear to have less startup capital than non-Hispanic white-owned businesses and male-owned businesses.<sup>3</sup> For example:

- In 2007, 30 percent of majority-owned businesses that responded to a national U.S. Census Bureau survey indicated that they had startup capital of \$25,000 or more;<sup>4</sup>
- Only 17 percent of African American-owned businesses indicated a comparable amount of startup capital;
- Disparities in startup capital were identified for every other minority group except Asian Americans; and
- Nineteen percent of female-owned businesses reported startup capital of \$25,000 or more compared with 32 percent of male-owned businesses (not including businesses that were equally owned by men and women).

Similar research using longitudinal data from 2004 through 2006 found African American-owned firms received significantly lower levels of external startup capital, after controlling for owner and business characteristics, and relied more on owner equity funding. This finding persisted in subsequent years of business operation.<sup>5</sup>

Race- or gender-based discrimination in startup capital can have long-term consequences, as can discrimination in access to business loans after businesses have already been formed.<sup>6</sup>

Keen Independent examined access to capital in Arizona. Appendix G begins by presenting information about homeownership and mortgage lending as home equity can be an important source of capital to start and expand businesses. The appendix then presents information about business loans, assessing whether minorities and women experience any difficulties acquiring business capital.

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<sup>1</sup> For example, see Mitchell, Karlyn and Douglas K. Pearce. 2005. "Availability of Financing to Small Firms Using the Survey of Small Business Finances." U.S. Small Business Administration, Office of Advocacy. 57.

<sup>2</sup> Fairlie, Robert W. and Alicia M. Robb. 2010. *Race and Entrepreneurial Success*. Cambridge: MIT Press.

<sup>3</sup> Ibid.

<sup>4</sup> Business owners were asked, "What was the total amount of capital used to start or acquire this business? (Capital includes savings, other assets, and borrowed funds of owner(s))." From U.S. Census Bureau, Statistics for All U.S. Firms by Total Amount of Capital Used to Start or Acquire the Business by Industry, Gender, Ethnicity, Race, and Veteran Status for the U.S.: 2007 Survey of Business Owners:

[http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=SBO\\_2007\\_00CSCB16&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=SBO_2007_00CSCB16&prodType=table)

<sup>5</sup> Robb, Alicia, Fairlie, Robert w. and Robinson, David T. 2009. "Capital Injections among New Black and White Business Ventures: Evidence from the Kauffman Firm Survey." Working Paper. Federal Reserve Bank of Cleveland.

<sup>6</sup> Fairlie, Robert W. and Alicia M. Robb. 2010. *Race and Entrepreneurial Success*. Cambridge: MIT Press.

## Homeownership and Mortgage Lending

Keen Independent analyzed homeownership and the mortgage lending industry to explore differences across race/ethnicity and gender that may lead to disparities in access to capital.

**Homeownership.** Wealth created through homeownership can be an important source of capital to start or expand a business. In sum:

- A home is a tangible asset that provides borrowing power;<sup>7</sup>
- Wealth that accrues from housing equity and tax savings from homeownership contributes to capital formation;<sup>8</sup>
- Next to business loans, mortgage loans have traditionally been the second largest loan type for small businesses;<sup>9</sup> and
- Homeownership is associated with an estimated 30 percent reduction in the probability of loan denial for small businesses.<sup>10</sup>

Any barriers to homeownership and home equity growth for minorities and women can affect business opportunities by constraining their available funding. Similarly, any barriers to accessing home equity through home mortgages can also affect available capital for new or expanding businesses. Recent research confirms the importance of homeownership on the likelihood of starting a business, even when examined separately by recent work history (independently examining workers that recently experienced a job loss and those that did not). A strong relationship exists between increases in home equity and entry into self employment for both groups.<sup>11</sup> Keen Independent analyzed homeownership rates and home values before considering loan denial and subprime lending.

It is important to note that the Great Recession depressed homeownership rates, reduced home values and equity in homes, and changed the mortgage finance market. Nationally and in Arizona, lower (or negative) equity in a home and tighter lending standards during the Great Recession may have limited home equity as source of capital for many existing or potential business owners. Therefore, the following examination of homeownership and mortgage lending in Arizona considers conditions before and after the start of the Great Recession in 2007.

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<sup>7</sup> Nevin, Allen. 2006. "Homeownership in California: A CBIA Economic Treatise." *California Building Industry Association*. 2.

<sup>8</sup> Jackman, Mary R. and Robert W. Jackman 1980. "Racial Inequalities in Home Ownership." *Social Forces*. 58. 1221-1234.

<sup>9</sup> Berger, Allen N. and Gregory F. Udell. 1998. "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle." *Journal of Banking and Finance*. 22.

<sup>10</sup> Cavalluzzo, Ken and John Wolken. 2005. "Small Business Loan Turndowns, Personal Wealth and Discrimination." *Journal of Business*. 78:2153-2178.

<sup>11</sup> Fairlie, Robert W. and Harry A. Krashinsky. 2012. "Liquidity Constraints, Household Wealth and Entrepreneurship Revisited." *Review of Income and Wealth*. 58(2).

**Homeownership rates.** Many studies have documented past discrimination in the national housing market. The United States has a history of restrictive real estate covenants and property laws that affect the ownership rights of minorities and women.<sup>12</sup> For example, in the past, a woman's participation in homeownership was secondary to that of her husband and parents.<sup>13</sup>

Figure G-1 presents the percentage of households in each racial/ethnic group in Arizona that were homeowners in 2000 (based on Census of Population data) and 2008 through 2012 (based on U.S. Bureau of the Census American Community Survey or "ACS" data).

From 2000 to 2008-2012, homeownership rates dropped for all groups with the exception of Asian-Pacific Americans. In 2000, 73 percent of households headed by non-Hispanic whites owned homes. Homeownership dropped to 70 percent for non-Hispanic whites in 2008-2012.<sup>14</sup> African Americans experienced the largest decline during this time period, from 44 percent homeownership in 2000 to 34 percent homeownership in 2008-2012.

Significantly fewer minorities owned homes in Arizona in 2000 and in 2008-2012 compared with non-Hispanic whites. Keen Independent identified statistically significant disparities in homeownership for African Americans, Asian-Pacific Americans, Subcontinent Asian Americans, Hispanic Americans and Native Americans for both time periods. For example, about one-third of African American households owned homes in 2008-2012, less than one-half the rate of homeownership of non-Hispanic whites.

The data for Arizona indicate that relatively fewer minorities than non-Hispanic whites have had access to equity in a home for starting or expanding a business.

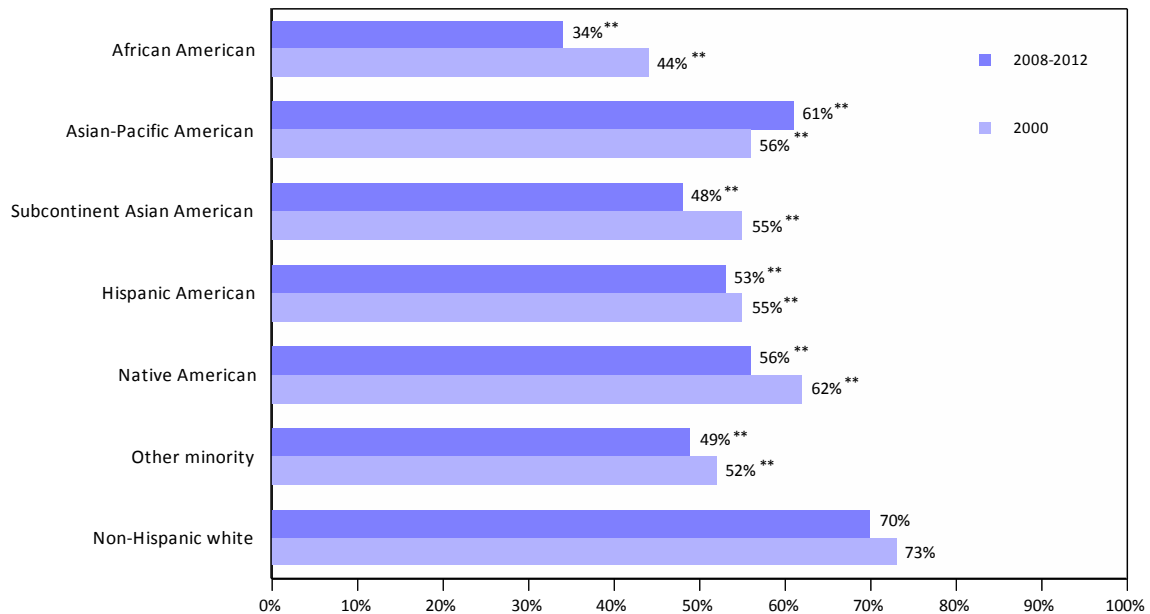
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<sup>12</sup> Ladd, Helen F. 1982. "Equal Credit Opportunity: Women and Mortgage Credit." *The American Economic Review*. 72:166-170.

<sup>13</sup> Card, Emily. 1980. "Women, Housing Access, and Mortgage Credit." *Signs*. 5:215-219.

<sup>14</sup> These data are consistent with national homeownership trends. Data from the U.S. Census Bureau Social, Economic and Housing Statistics Division show U.S. homeownership peaked in the first quarter of 2005 at 69.2 percent. Homeownership for the first quarter of 2014 was 65 percent.

**Figure G-1.**  
**Homeownership rates, 2000 and 2008-2012**



Note: The sample universe is all households. \*, \*\* Denote that the difference in proportions from non-Hispanic white for the given year is statistically significant at the 90% or 95% confidence level, respectively.

Source: Keen Independent Research from 2000 U.S. Census 5% sample and 2010-2012 ACS Public Use Microdata samples. The 2000 Census and 2010-2012 ACS raw data extracts were obtained through the IPUMS program of the MN Population Center: <http://usa.ipums.org/usa/>.

Lower rates of homeownership may reflect lower incomes for minorities. That relationship may be self-reinforcing, as low wealth puts individuals at a disadvantage in becoming homeowners, which has historically been a path to building wealth. An older study found that the probability of homeownership is considerably lower for African Americans than it is for comparable non-Hispanic whites throughout the United States.<sup>15</sup> Recent research shows that while African Americans narrowed the homeownership gap in the 90s, the first half of the following decade brought little change and the second half of the decade brought significant losses, resulting in a widening of the gap between African Americans and non-Hispanic whites.<sup>16</sup>

**Home values.** In addition to studying homeownership rates by gender and race/ethnicity, it is also important to consider the value of homes owned because the value represents an outside limit of accessible capital from the asset. Using 2000 Census data and 2008-2012 ACS data, Keen Independent compared median home values by racial/ethnic group in Arizona. The median value of homes owned by non-Hispanic whites was about \$110,000 in 2000 and \$170,000 in 2008-2012 (home prices rose in Arizona in the first half of the 2000s before declining during the Great Recession).

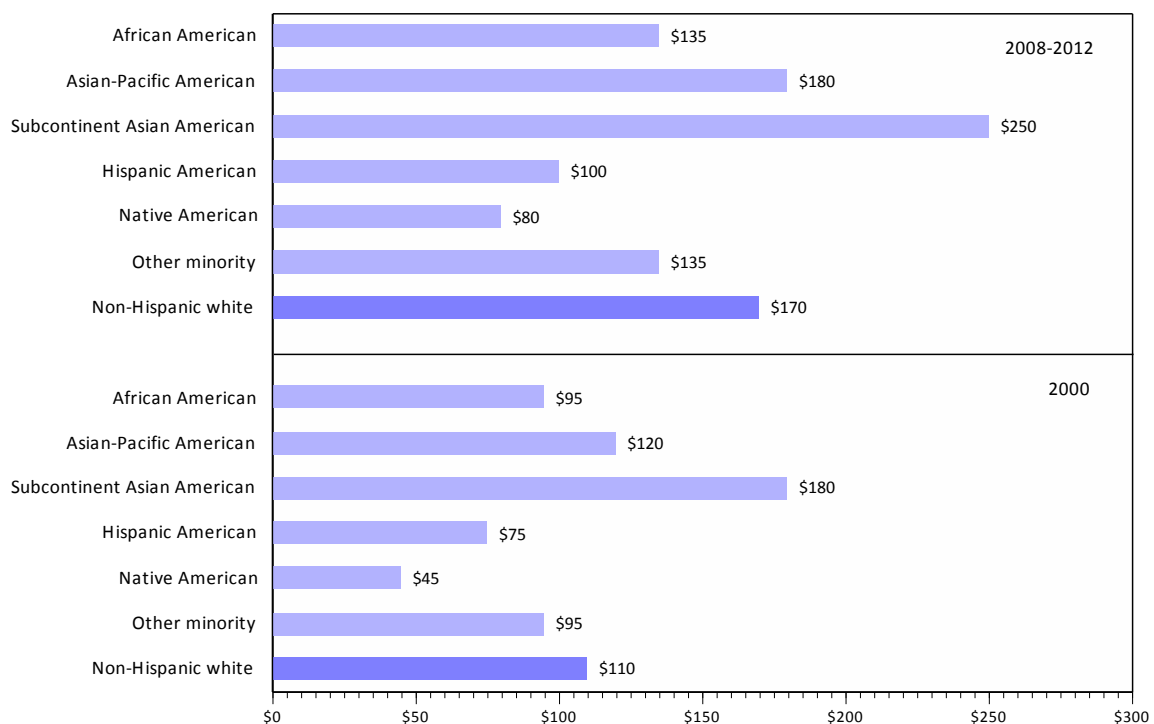
<sup>15</sup> Jackman. 1980. "Racial Inequalities in Home Ownership."

<sup>16</sup> Rosebaum, E. 2012. "Home Ownership's Wild Ride, 2001-2011." U.S. 2010 Project, Census Brief. New York: Russell Sage Foundation.

The median value of homes owned by Native Americans, Hispanic Americans and African Americans in Arizona was considerably less than homes owned by non-Hispanic whites in both 2000 and 2008-2012. The median value of homes owned by Subcontinent Asian Americans was higher than non-Hispanic whites in both time periods. Median home values for Asian-Pacific Americans were about the same as for non-Hispanic whites.

Much research has been conducted on the determinants of housing values. In addition to factors such as number of rooms, number of bathrooms and lot size, the availability of residential services may have as much or more of an impact on housing prices.<sup>17</sup> A 2005 study by researchers at Arizona State University examines the historical making of South Phoenix, a neighborhood that remains heavily populated by Hispanic and African American residents. The study reports that historic discriminatory practices in zoning, provision of public services such as sewage and electricity, location of transportation routes including highways, railways and Sky Harbor Airport and siting of hazardous waste and toxic industries continue to negatively affect housing values for this minority community.<sup>18</sup>

**Figure G-2.**  
Median home values, 2000 and 2008-2012, thousands



Note: The sample universe is all owner-occupied housing units.

Source: Keen Independent Research from 2000 U.S. Census 5% sample and 2010-2012 ACS Public Use Microdata samples. The 2000 Census and 2010-2012 ACS raw data extracts were obtained through the IPUMS program of the MN Population Center: <http://usa.ipums.org/usa/>.

<sup>17</sup> Kain, John.F. and John M. Quigley. 1970. "Measuring the Value of Housing Quality." *Journal of the American Statistical Association*. 65: 532-548.

<sup>18</sup> Bolin, Bob, Sara Grineski and Timothy Collins. 2005. "The Geography of Despair: Environmental Racism and the Making of South Phoenix, Arizona, USA." *Human Ecological Review*. 12(2):156-168.

**Mortgage lending.** Minorities may be denied opportunities to own homes, to purchase more expensive homes, or to access equity in their homes if they are discriminated against when seeking home mortgages. Therefore, any such discrimination could have lasting effects. In a recent lawsuit, Bank of America paid \$335 million to settle allegations that its Countrywide Financial unit discriminated against African American and Hispanic American borrowers between 2004 and 2008. The case was brought by the Securities and Exchange Commission after finding evidence of “statistically significant disparities by race and ethnicity” among Countrywide Financial customers.<sup>19</sup>

Keen Independent explored market conditions for mortgage lending in Arizona. The best available source of information concerning mortgage lending is Home Mortgage Disclosure Act (HMDA) data, which contain information on mortgage loan applications that financial institutions, savings banks, credit unions, and some mortgage companies receive.<sup>20</sup> Those data include information about the location, dollar amount, and types of loans made, as well as race, ethnicity, income, and credit characteristics of all loan applicants. The data are available for home purchases, loan refinances and home improvement loans.

Keen Independent examined HMDA statistics provided by the Federal Financial Institutions Examination Council (FFIEC) for 2007 and 2012. Although 2012 provides the most current representation of the home mortgage market, the 2007 data represent a more complete data set from before the recent mortgage crisis. Many of the institutions that originated loans in 2007 were no longer in business by the 2012 reporting date for HMDA data.<sup>21</sup> For example, the 2007 HMDA data include information about 522,000 loan applications in Arizona that approximately 930 lenders processed. The 2012 HMDA data for Arizona include information about 213,000 loan applications that about 650 lenders processed. In addition, the percentage of government-insured loans, which Keen Independent did not include in its analysis, increased dramatically between 2007 and 2012, decreasing the proportion of total loans analyzed in the 2012 data.<sup>22</sup>

**Mortgage denials.** Keen Independent examined mortgage denial rates on conventional loan applications for high-income borrowers. Conventional loans are loans that are not insured by a government program. High-income borrowers are those households with 120 percent or more of the U.S. Department of Housing and Urban Development (HUD) area median family income.<sup>23</sup> Loan

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<sup>19</sup> Savage, Charlie. December 22, 2011. “\$335 Million Settlement on Countywide Lending Bias.” *NYTimes.com*. Available online at: <http://www.nytimes.com/2011/12/22/business/us-settlement-reported-on-countrywide-lending.html>.

<sup>20</sup> Financial institutions were required to report 2011 HMDA data if they had assets of more than \$40 million (\$35 million for 2006), have a branch office in a metropolitan area, and originated at least one home purchase or refinance loan in the reporting calendar year. Mortgage companies are required to report HMDA data if they are for-profit institutions, had home purchase loan originations exceeding 10 percent of all loan obligations in the past year, are located in a Metropolitan Statistical Area (MSA; or originated five or more home purchase loans in an MSA) and either had more than \$10 million in assets or made at least 100 home purchase or refinance loans in the calendar year.

<sup>21</sup> According to an article by the Federal Reserve, the volume of reported loan applications and originations fell sharply from 2007 to 2008 after previously falling between 2006 and 2007. See Avery, Brevoort, and Canner, “The 2008 HMDA Data: The Mortgage Market during a Turbulent Year.” Available online: <http://www.federalreserve.gov/pubs/bulletin/2009/pdf/hmda08draft.pdf>.

<sup>22</sup> Loans insured by government programs have surged since 2006. In 2006, about 10 percent of first lien home loans were insured by a government program. More than half of home loans were insured by the government in 2009. Source: “The 2009 HMDA Data: The Mortgage Market in a Time of Low Interest Rates and Economic Distress,” *Federal Reserve Bulletin*. December 2010, pp A39-A77.

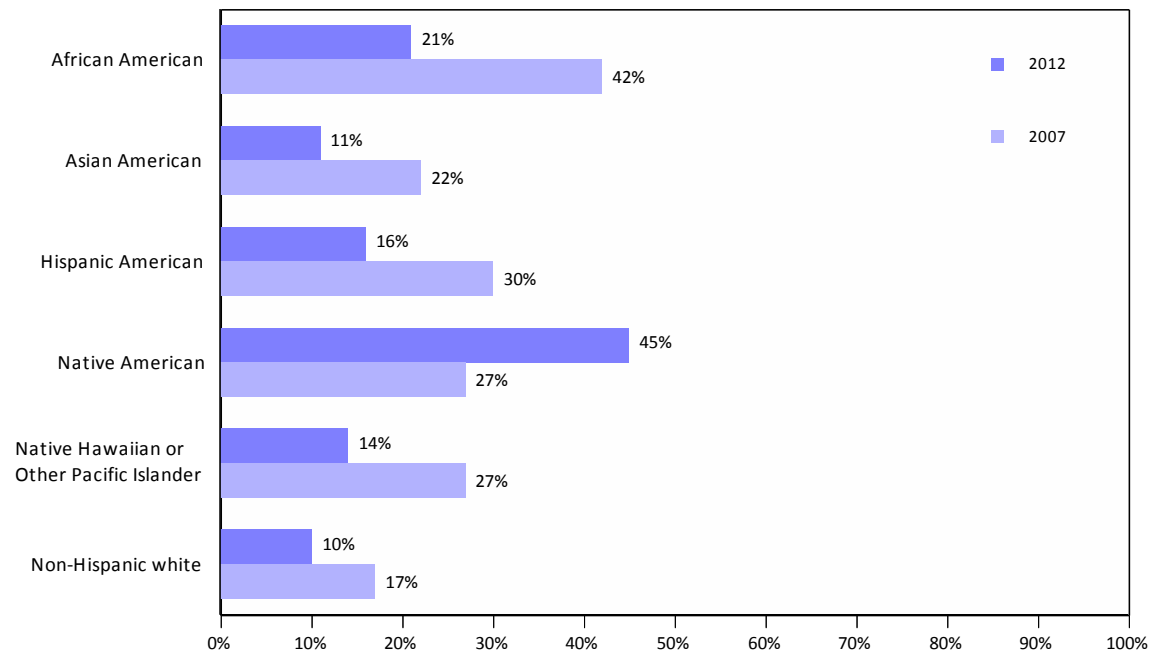
<sup>23</sup> The median family income in 2012 was about \$65,000 for the United States as a whole and \$61,600 for Arizona. Median family income for 2007 was about \$59,000 for the United States as a whole and \$54,400 for Arizona. Source: U.S. Department of Housing and Urban Development, FY 2007 Income Limits and FY 2012 Income Limits.

denial rates are calculated as the percentage of mortgage loan applications that were denied, excluding applications that the potential borrowers terminated and applications that were closed due to incompleteness.<sup>24</sup>

Figure G-3 presents loan denial results for high-income households in Arizona in 2007 and 2012. In 2007, African American, Asian American, Hispanic American, Native American and Native Hawaiian or other Pacific Islander high-income applicants all exhibited higher loan denial rates compared with high-income non-Hispanic white applicants.<sup>25</sup> The denial rate for high-income African Americans (42%) was more than twice the rate of high-income non-Hispanic white applicants (17%).

Even though mortgage loan denial rates for high-income households had fallen in Arizona by 2012 for most groups, each minority group except for Asian Americans had higher loan denial rates than non-Hispanic whites. The denial rate for high-income African American households remained twice that of high-income non-Hispanic white households. The denial rate for high-income Native Americans was more than four times that of high-income non-Hispanic whites in 2012.

**Figure G-3.**  
Denial rates of conventional purchase loans to high-income households,  
Arizona, 2007 and 2012



Note: High-income borrowers are those households with 120% or more than the HUD area median family income (MFI).

Loan denial rates are calculated as the percentage of mortgage loan applications that were denied, excluding applications that the potential borrowers terminated and applications that were closed due to incompleteness.

Source: FFIEC HMDA data 2007, and 2012.

<sup>24</sup> For this analysis, loan applications are considered to be applications for which a specific property was identified, thus excluding preapproval requests.

<sup>25</sup> HMDA data group Native Hawaiians and other Pacific Islanders into a single category. According to 49 CFR 26.5 Native Hawaiians are considered Native Americans but other Pacific Islanders are considered Asian. Since the HMDA racial group cannot be split nor accurately included in Native Americans or Asian Americans, it is shown as an individual racial category.

**Additional research.** Several national studies have examined disparities in loan denial rates and loan amounts for minorities in the presence of other influences. For example:

- A study by the Federal Reserve Bank of Boston is one of the most cited studies of mortgage lending discrimination.<sup>26</sup> It was conducted using the most comprehensive set of credit characteristics ever assembled for a study on mortgage discrimination.<sup>27</sup> The study provided persuasive evidence that lenders in the Boston area discriminated against minorities in 1990.<sup>28</sup>
- Using the Federal Reserve Board's 1983 Survey of Consumer Finances and the 1980 Census of Population and Housing data, analyses revealed that minority households were one-third as likely to receive conventional loans as non-Hispanic white households after taking into account financial and demographic variables.<sup>29</sup>
- Results of a Midwest study indicate a relationship between race and both the number and size of mortgage loans. Data matched on socioeconomic characteristics revealed that African American borrowers across 13 census tracts received significantly fewer loans and of smaller sizes compared to their white counterparts.<sup>30</sup>

However, other studies have found that differences in preferences for Federal Housing Administration (FHA) loans — mortgage loans that the government insures — versus conventional loans among racial and ethnic groups may partially explain disparities found in conventional loan approvals between minorities and non-minorities.<sup>31</sup> Several studies have found that, historically, minority borrowers are far more likely to seek FHA loans than comparable non-Hispanic white borrowers across different income and wealth levels. The insurance on FHA loans protects the lender, but the borrower can be disadvantaged by paying higher borrowing costs.<sup>32, 33</sup>

**Subprime lending.** Loan denial is only one of several ways minorities might be discriminated against in the home mortgage market. Mortgage lending discrimination can also occur through higher fees and interest rates. Subprime lending provides a unique example of such types of discrimination through fees associated with various loan types.

Until the Great Recession, one of the fastest growing segments of the home mortgage industry was subprime lending. From 1994 through 2003, subprime mortgage activity grew by 25 percent per year and accounted for \$330 billion of U.S. mortgages in 2003, up from \$35 billion a decade earlier. In 2006, subprime loans represented about one-fifth of all mortgages in the United States.<sup>34</sup> With higher interest rates than prime loans, subprime loans were historically marketed to customers with

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<sup>26</sup> Munnell, Alicia H., Geoffrey Tootell, Lynn Browne and James McEneaney. 1996. "Mortgage Lending in Boston: Interpreting HMDA Data." *The American Economic Review*. 86: 25-53.

<sup>27</sup> Ladd, Helen F. 1998. "Evidence on Discrimination in Mortgage Lending." *The Journal of Economic Perspectives*. 12:41-62.

<sup>28</sup> Yinger, John. 1995. *Closed Doors, Opportunities Lost: The Continuing Costs of Housing Discrimination*. New York: Russell Sage Foundation, 71.

<sup>29</sup> Canner, Glenn B., Stuart A. Gabriel and J. Michael Woolley. 1991. "Race, Default Risk and Mortgage Lending: A Study of the FHA and Conventional Loan Markets." *Southern Economic Journal*. 58:249-262.

<sup>30</sup> Leahy, Peter J. 1985. "Are Racial Factors Important for the Allocation of Mortgage Money?: A Quasi-Experimental Approach to an Aspect of Discrimination." *American Journal of Economics and Sociology*. 44:185-196.

<sup>31</sup> Canner. 1991. "Race, Default Risk and Mortgage Lending: A Study of the FHA and Conventional Loan Markets."

<sup>32</sup> Yinger. 1995. *Closed Doors, Opportunities Lost: The Continuing Costs of Housing Discrimination*. 80.

<sup>33</sup> See definition of subprime loans discussed on the following page.

<sup>34</sup> Avery, Brevoort, and Canner, "The 2006 HMDA Data." Federal Reserve Bulletin, December 2007, pp. A73-A109.

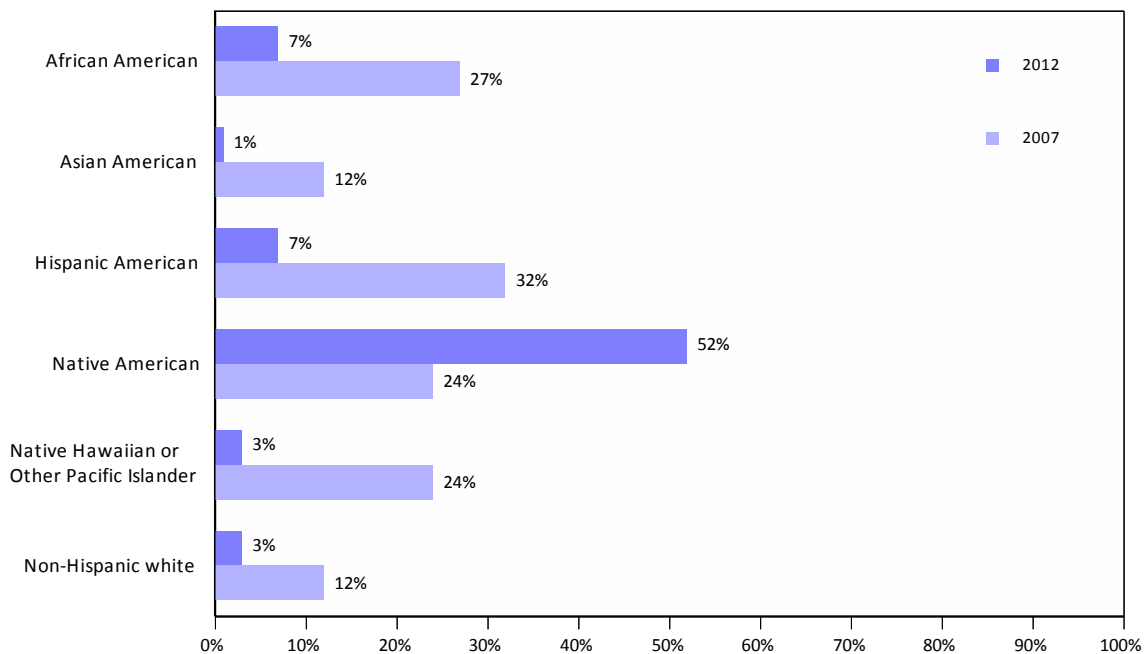


blemished or limited credit histories who would not typically qualify for prime loans. Subprime loans also became available to homeowners who did not want to or could not make a down payment, did not want to provide proof of income and assets, or wanted to purchase a home with a cost higher than what they would qualify for from a prime lender.<sup>35</sup> The higher interest rates and additional costs of subprime loans affected homeowners' ability to grow home equity and increased their risks of foreclosure.

There are several commonly-used approaches to defining a subprime loan and examining rates of subprime lending. Keen Independent used a "rate-spread method" in which subprime loans are identified as those loans with substantially above-average interest rates.<sup>36</sup> Because lending patterns and borrower motivations differ depending on the type of loan sought, Keen Independent separately considered home purchase loans and refinance loans. Patterns in subprime lending did not differ substantially between the different types of loans.

Figure G-4 presents the percentage of conventional home purchase loans that were subprime in Arizona based on 2007 and 2012 HMDA data. The share of conventional home purchase loans that were subprime declined with the collapse of the mortgage lending market in the late 2000s.

**Figure G-4.**  
Percent of conventional home purchase loans that were subprime, Arizona, 2007 and 2012



Note: Calculated as the percentage of originated loans that were subprime.

Source: FFIEC HMDA data 2007 and 2012.

<sup>35</sup> Gerardi, Shapiro, and P. Willen. 2008. "Subprime Outcomes: Risky Mortgages, Homeownership Experiences, and Foreclosure." *Federal Reserve Bank of Boston*.

<sup>36</sup> Prior to October 2009, first lien loans were identified as subprime if they had an annual percentage rate (APR) that was 3.0 percentage points or greater than the federal treasury security rate of like maturity. As of October 2009, rate spreads in HMDA data were calculated as the difference between APR and Average Prime Offer Rate, with subprime loans defined as 1.5 percentage points of rate spread or more. Keen Independent identified subprime loans according to those measures in the corresponding time periods.

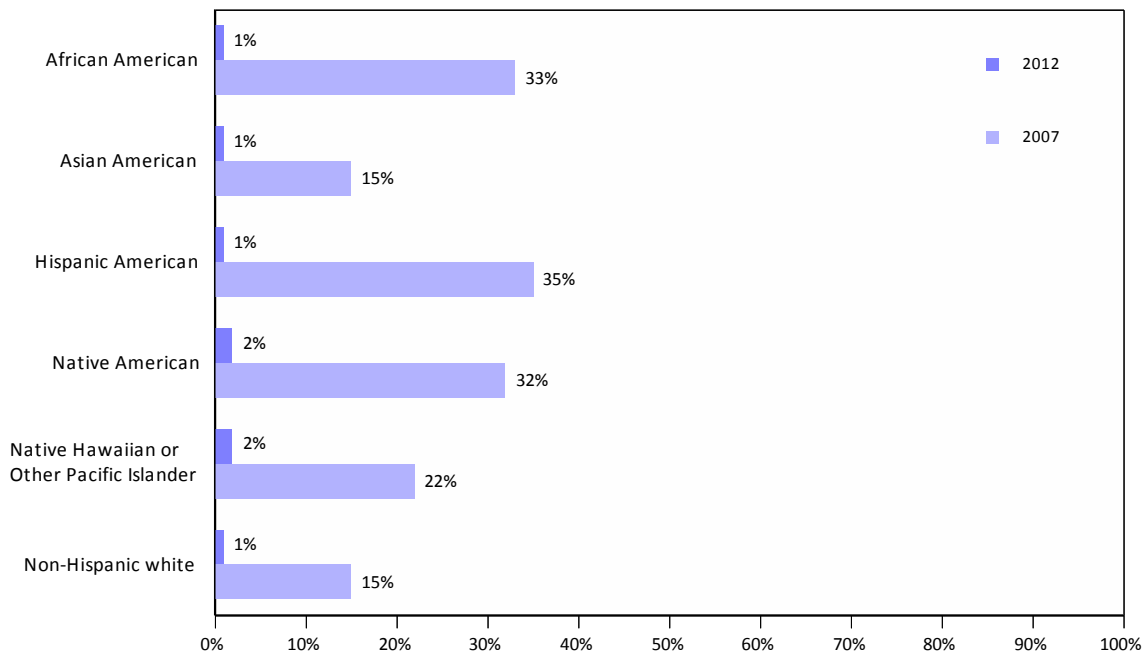
In Arizona in 2007, one-third of home purchase loans that were issued to Hispanic Americans were subprime, more than double the percentage for non-Hispanic whites (12%). Subprime loans also accounted for a relatively large portion of conventional home mortgages for African Americans, Native Americans, and Native Hawaiian and other Pacific Islander borrowers.

By 2012, subprime loans as a percentage of all conventional home purchase loans issued in Arizona that year dropped for each racial/ethnic group, with the exception of Native Americans. Subprime loans still accounted for a larger share of conventional home purchase loans for African Americans and Hispanic Americans than for non-Hispanic whites (7% for each group compared with 3%). The subprime rate for Native Americans in 2012 remained notably high at 52 percent.

Figure G-5 presents similar information for conventional home refinance loans in Arizona. In 2007, 15 percent of non-Hispanic white refinance borrowers in Arizona obtained subprime loans. Except for Asian Americans, subprime loans comprised a much larger share of refinance loans for minority borrowers (about one-third for African Americans, Hispanic Americans and Native Americans).

In 2012, the share of conventional refinance mortgages that were subprime in Arizona dropped to 1 to 2 percent for each racial/ethnic group.

**Figure G-5.**  
Percent of conventional refinance loans that were subprime, Arizona, 2007 and 2012



Note: Calculated as the percentage of originated loans that were subprime.

Source: FFIEC HMDA data 2007 and 2012.

**Additional research.** Some evidence suggests that lenders sought out and offered subprime loans to individuals who often would not be able to pay off the loan, a form of “predatory lending.”<sup>37</sup> Furthermore, some research has found that many recipients of subprime loans could have qualified for prime loans.<sup>38</sup> Previous studies of subprime lending suggest that predatory lenders have disproportionately targeted minorities. A 2001 HUD study using 1998 HMDA data found that subprime loans were disproportionately concentrated in African American neighborhoods compared with white neighborhoods, even after controlling for income.<sup>39</sup> For example, borrowers in higher-income African American neighborhoods were six times more likely to refinance with subprime loans than borrowers in higher-income white neighborhoods. More recent analyses using 2006 HMDA data found that African American borrowers, going to the same lender and displaying similar financial characteristics, were significantly more likely to receive high-cost loans (those with an interest rate more than 3 percent higher than comparable U.S. Treasury instruments) compared to non-Hispanic whites.<sup>40</sup> More recent research using 2007 HMDA data analyzed differences between high-cost loans among borrowers of different racial and gender backgrounds at comparable income levels and found, on average, African American and Hispanic borrowers were about 1.7 to 2.8 times more likely to receive high-cost loans relative to similarly situated non-minority borrowers in both the Phoenix-Mesa-Scottsdale and Tucson metropolitan areas<sup>41,42</sup>.

**Implications of the recent mortgage lending crisis.** The turmoil in the housing market since late 2006 has been far-reaching, resulting in the loss of home equity, decreased demand for housing, and increased rates of foreclosure.<sup>43</sup> Much of the blame has been placed on risky practices in the mortgage industry including substantial increases in subprime lending. As discussed above, the number of subprime mortgages increased at an extraordinary rate between the mid-1990s and mid-2000s. Those high-cost, high-interest loans increased from 8 percent of originations in 2003 to 20 percent in 2005 and 2006.<sup>44</sup> The preponderance of subprime lending is important because households that were repaying subprime loans had a greater likelihood of delinquency or foreclosure. A 2008 study released from the Federal Reserve Bank of Boston found that, “homeownerships that begin with a subprime purchase mortgage end up in foreclosure almost 20 percent of the time, or more than six times as often as experiences that begin with prime purchase mortgages.”<sup>45</sup>

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<sup>37</sup> Department of Housing and Urban Development (HUD) and the Department of Treasury. 2001. HUD-Treasury National Predatory Lending Task Force Report. *HUD*; Carr, J. and L. Kolluri. 2001. Predatory Lending: An Overview. *Fannie Mae Foundation*; and California Reinvestment Coalition, Community Reinvestment Association of North Carolina, Empire Justice Center, Massachusetts Affordable Housing Alliance, Neighborhood Economic Development Advocacy Project, Ohio Fair Lending Coalition and Woodstock Institute, 2008. “Paying More for the American Dream.”

<sup>38</sup> Freddie Mac. 1996, September. “Automated Underwriting: Making Mortgage Lending Simpler and Fairer for America's Families.” *Freddie Mac*. (accessed February 5, 2007); and Lanzerotti. 2006. “Homeownership at High Cost: Foreclosure Risk and High Cost Loans in California.” *Federal Reserve Bank of San Francisco*.

<sup>39</sup> Department of Housing and Urban Development (HUD) and the Department of Treasury. 2001.

<sup>40</sup> Maya Sen. 2012. “Quantifying Discrimination: Exploring the Role of Race and Gender and the Awarding of Subprime Mortgage Loans.” Available at SSRN: <http://ssrn.com/abstract=1593183>.

<sup>41</sup> Rates varied between about 1.7 and 2.5 for African Americans and Hispanics by gender and income category as well as metropolitan area.

<sup>42</sup> National Council of Negro Women. 2009. “Income is No Shield, Part III-Assessing the Double Burden: Examining Racial and Gender Disparities in Mortgage Lending.”

<sup>43</sup> Joint Center for Housing Studies of Harvard University. 2008. “The State of the Nation's Housing.”

<sup>44</sup> *Ibid*.

<sup>45</sup> Gerardi, Shapiro, and P. Willen. 2008. “Subprime Outcomes: Risky Mortgages, Homeownership Experiences, and Foreclosure.” *Federal Reserve Bank of Boston*.

Such problems substantially impact the ability of homeowners to secure capital through home mortgages to start or expand small businesses. That issue has been highlighted in statements made by members of the Board of Governors of the Federal Reserve System to the U.S. Senate and U.S. House of Representatives:

- On April 16, 2008, Frederic Mishkin informed the U.S. Senate Committee on Small Business and Entrepreneurship that “one of the most important concerns about the future prospects for small business access to credit is that many small businesses use real estate assets to secure their loans. Looking forward, continuing declines in the value of their real estate assets clearly have the potential to substantially affect the ability of those small businesses to borrow. Indeed, anecdotal stories to this effect have already appeared in the press.”<sup>46</sup>
- On November 20, 2008, Randall Kroszner told the U.S. House of Representatives Committee on Small Business that “small business and household finances are, in practice, very closely intertwined. [T]he most recent Survey of Small Business Finances (SSBF) indicated that about 15 percent of the total value of small business loans in 2003 was collateralized by ‘personal’ real estate. Because the condition of household balance sheets can be relevant to the ability of some small businesses to obtain credit, the fact that declining house prices have weakened household balance-sheet positions suggests that the housing market crisis has likely had an adverse impact on the volume and price of credit that small businesses are able to raise over and above the effects of the broader credit market turmoil.”<sup>47</sup>

Federal Reserve Chairman Ben Bernanke recognized the reality of those concerns in a speech titled “Restoring the Flow of Credit to Small Businesses” on July 12, 2010.<sup>48</sup> Bernanke indicated that small businesses have had difficulty accessing credit and pointed to the declining value of real estate as one of the primary obstacles.

Furthermore, the National Federation of Independent Business (NFIB) conducted a national survey of 751 small businesses in late-2009 to investigate how the recession impacted access to capital.<sup>49, 50</sup> NFIB concluded that “falling real estate values (residential and commercial) severely limit small business owner capacity to borrow and strains currently outstanding credit relationships.” Survey results indicated that 95 percent of small business employers owned real estate and 13 percent held “upside-down” property — that is, property for which the mortgage is worth more than its appraised value.

Another study analyzed the Survey of Consumer Finances to explore racial/ethnic disparities in wealth and how those disparities were impacted by the recession.<sup>51</sup> The study showed that there are

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<sup>46</sup> Mishkin, Frederic. 2008. “Statement of Frederic S. Mishkin, Member, Board of Governors of the Federal Reserve System before the Committee on Small Business and Entrepreneurship, U.S. Senate on April 16.”

<sup>47</sup> Kroszner, Randall. 2008. “Effects of the financial crisis on small business.” Testimony before the Committee on Small Business, U.S. House of Representative on November 20.

<sup>48</sup> Bernanke, Ben. 2010. Restoring the Flow of Credit to Small Businesses. Presented at the Federal Reserve Meeting Series: Addressing the Financing Needs of Small Businesses on July 12.

<sup>49</sup> The study defined a small business as a business employing no less than one individual in addition to the owner(s) and no more than 250 individuals.

<sup>50</sup> National Federation of Independent Business (NFIB). 2010. Small Business Credit in a Deep Recession.

<sup>51</sup> McKernan, Signe-Mary, Caroline Ratcliffe, Eugene Steverle and Sisi Zhang. 2013. “Less Than Equal: Racial Disparities in Wealth Accumulation.” Urban Institute.

substantial wealth disparities between African Americans and whites as well as Hispanics and whites and that those wealth disparities worsened between 1983 and 2010. In addition to growing over time, the wealth disparity also grows with age — whites are on a higher accumulation curve than blacks or Hispanics. The study also reports that the 2007-2009 recession exacerbated wealth disparities, particularly for Hispanics.

Opportunities to obtain business capital through home mortgages appear to be limited especially for homeowners with little home equity. Furthermore, the increasing rates of default and foreclosure, especially for homeowners with subprime loans, reflect shrinking access to capital available through such loans. Those consequences are likely to have a disproportionate impact on minorities in terms of both homeownership and the ability to secure capital for business startup and growth.

**Redlining.** Redlining refers to mortgage lending discrimination against geographic areas associated with high lender risk. Those areas are often racially determined, such as African American or mixed-race neighborhoods.<sup>52</sup> That practice can perpetuate problems in already poor neighborhoods.<sup>53</sup> Most quantitative studies have failed to find strong evidence in support of geographic dimensions of lender decisions. Studies in Columbus, Ohio; Boston, Massachusetts; and Houston, Texas found that racial differences in loan denial had little to do with the racial composition of a neighborhood but rather with the individual characteristics of the borrower.<sup>54</sup> Some studies found that the race of an applicant — but not the racial makeup of the neighborhood — to be a factor in loan denials.

Studies of redlining have primarily focused on the geographic aspect of lender decisions. However, redlining can also include the practice of restricting credit flows to minority neighborhoods through procedures that are not observable in actual loan decisions. Examples include branch placement, advertising, and other pre-application procedures.<sup>55</sup> Such practices can deter minorities from starting businesses. Locations of financial institutions are important to small business startup, because local banking sectors often finance local businesses.<sup>56</sup> Redlining practices would deny that resource to minorities.

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<sup>52</sup> Holloway, Steven R. 1998. "Exploring the Neighborhood Contingency of Race Discrimination in Mortgage Lending in Columbus, Ohio." *Annals of the Association of American Geographers*. 88:252-276.

<sup>53</sup> Ladd, Helen F. 1998. "Evidence on Discrimination in Mortgage Lending." *The Journal of Economic Perspectives*. 12:41-62.

<sup>54</sup> See Holloway. 1998. "Exploring the Neighborhood Contingency of Race Discrimination in Mortgage Lending in Columbus, Ohio."; Tootell. 1996. "Redlining in Boston: Do Mortgage Lenders Discriminate Against Neighborhoods?"; and Holmes, Andrew and Paul Horvitz. 1994. "Mortgage Redlining: Race, Risk, and Demand." *The Journal of Finance*. 49:81-99.

<sup>55</sup> Yinger, John. 1995. "Closed Doors, Opportunities Lost: The Continuing Costs of Housing Discrimination." Russell Sage Foundation. New York. 78-79.

<sup>56</sup> Holloway. 1998. "Exploring the Neighborhood Contingency of Race Discrimination in Mortgage Lending in Columbus, Ohio."

**Steering by real estate agents.** Historically, differences in the types of loans that are issued to minorities have also been attributed to “steering” by real estate agents, who serve as an information filter.<sup>57</sup> Despite the fact that steering has been prohibited by law for many decades, some studies claim that real estate brokers provide different levels of assistance and different information on loans to minorities than they do to non-minorities.<sup>58</sup> Such steering can affect the perception of minority borrowers about the availability of mortgage loans.

A 2000 HUD study focusing on selected metropolitan areas found differential treatment of potential Hispanic homebuyers in Tucson by real estate agents. Specifically, the study found that real estate agents showed Hispanic homebuyers fewer houses and were less likely to make follow-up arrangements.<sup>59</sup>

**Gender discrimination in mortgage lending.** Relatively little information is available on gender-based discrimination in mortgage lending markets. Historically, lending practices overtly discriminated against women by requiring information on marital and childbearing status. Perceived risks associated with granting loans to women of childbearing age and unmarried women resulted in “income discounting,” limiting the availability of loans to women.<sup>60</sup>

The Equal Credit Opportunity Act in 1973 suspended such discriminatory lending practices. However, certain barriers affecting women have persisted after 1973 in mortgage lending markets. For example, there is some past evidence that lenders under-appraised properties for female borrowers.<sup>61</sup>

## **Access to Business Capital**

Barriers to accessing capital can have substantial impacts on small business formation and expansion. In-depth interviews with business owners and managers in Arizona indicated a strong link between capital and the ability to start and grow a business. In addition, several studies have found evidence that startup capital is important for business profits, longevity and other outcomes. For example:

- The amount of startup capital is associated with small business sales and other outcomes;<sup>62</sup>
- Limited access to capital has affected the size of African American-owned businesses;<sup>63, 64</sup> and
- Weak financial capital was identified as a reason that more African American-owned businesses closed over a four-year period compared with non-Hispanic white-owned businesses.<sup>65</sup>

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<sup>57</sup> Kantor, Amy C. and John D. Nystuen. 1982. “De Facto Redlining a Geographic View.” *Economic Geography*. 4:309-328.

<sup>58</sup> Yinger. 1995. *Closed Doors, Opportunities Lost: The Continuing Costs of Housing Discrimination*. 78–79.

<sup>59</sup> Turner, M.A., Ross, S.L., et al. 2002. “Discrimination in Metropolitan Housing Markets: National Results from Phase I HDS 2000.” U.S. Department of Housing and Urban Development.

<sup>60</sup> Card. 1980. “Women, Housing Access, and Mortgage Credit.”

<sup>61</sup> Ladd, Helen F. 1982. “Equal Credit Opportunity: Women and Mortgage Credit.” *The American Economic Review*. 72:166-170.

<sup>62</sup> See Fairlie, Robert W. and Harry A. Krashinsky. 2006. “Liquidity Constraints, Household Wealth, and Entrepreneurship Revisited”; and Grown. 1991. “Commercial Bank Lending Practices and the Development of Black-Owned Construction Companies.”

<sup>63</sup> Grown, C. and Bates, T. 1992. “Commercial Bank Lending Practices and the Development of Black-Owned Construction Companies.” *Journal of Urban Affairs*, 14: 25–41.

<sup>64</sup> Fairlie, Robert W. and Alicia M. Robb. 2010. *Race and Entrepreneurial Success*. Cambridge: MIT Press.

Bank loans are one of the largest sources of debt capital for small businesses.<sup>66</sup> Discrimination in the application and approval processes of those loans and other credit resources could be detrimental to the success of minority- and women-owned businesses. Previous studies have addressed racial/ethnic and gender discrimination in capital markets by evaluating:

- Loan denial rates;
- Loan values;
- Interest rates;
- Business owners' fears that loan applications will be rejected;
- Sources of capital; and
- Relationships between startup capital and business survival.

To examine the role of race/ethnicity and gender in capital markets, Keen Independent analyzed data from the Federal Reserve Board's 2003 Survey of Small Business Finances (SSBF) — the most comprehensive national source of credit characteristics of small businesses (those with fewer than 500 employees). The survey contains information on loan denial and interest rates as well as anecdotal information from businesses. The sample from 2003 contains records for 4,240 businesses. Keen Independent applied sample weights to provide representative estimates of loan denial and interest rates.

The SSBF records the geographic location of businesses by Census Division, not by city, county, or state. The Mountain Census Division ("Mountain region" throughout this report) includes Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming. The Mountain region is the level of geographic detail of SSBF data most specific to Arizona, and 2003 is the most recent information available from the SSBF as the survey was discontinued after that year.

**Loan denial rates.** Figure G-6 presents loan denial rates from the 2003 SSBF for the Mountain region and for the United States.<sup>67</sup> National SSBF data for 2003 reveal that the loan denial rate for African American-owned businesses (51%) in the United States was higher than for non-Hispanic white male-owned businesses (8%), a statistically significant difference. Denial rates were also higher for other minority groups and non-Hispanic white females but those differences were not statistically significant.

As shown in Figure G-6, about 13 percent of minority- and women-owned businesses in the Mountain region reported being denied loans in 2003, a larger percentage than the 10 percent of non-

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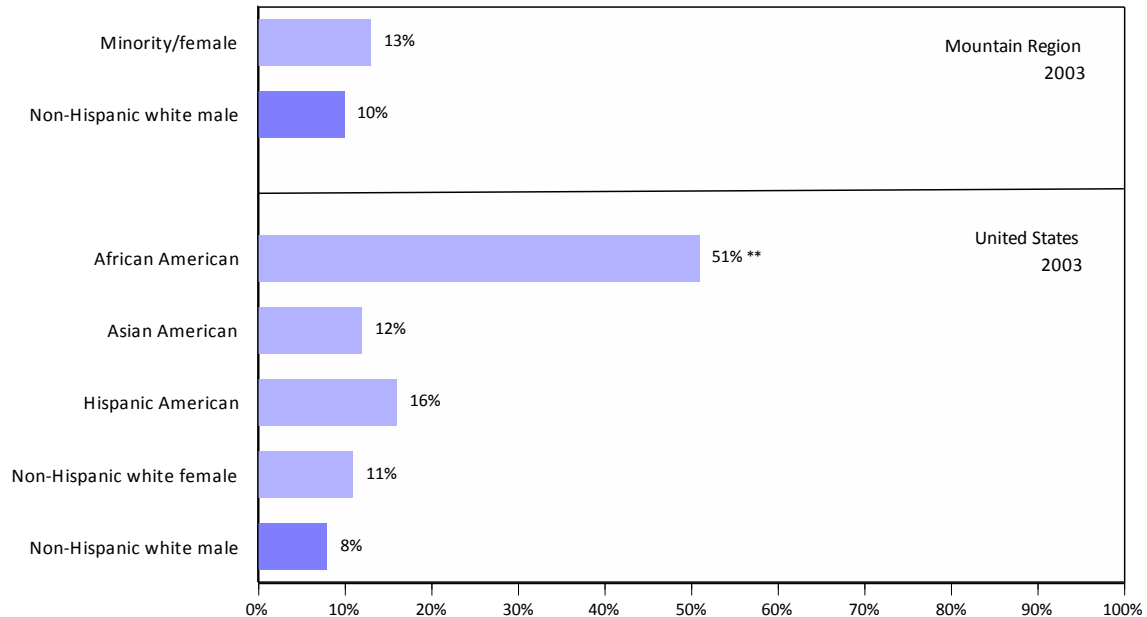
<sup>65</sup> Grown, C. and Bates, T. 1992. "Commercial Bank Lending Practices and the Development of Black-Owned Construction Companies." *Journal of Urban Affairs*, 14: 25–41.

<sup>66</sup> Data from the 1998 SSBF indicate that 70 percent of loans to small business are from commercial banks. That result is present across all gender and racial/ethnic groups with the exception of African Americans, whose rate of lending from commercial banks is even greater than other minorities. See Blanchard, Lloyd, Bo Zhao and John Yinger. 2005. "Do Credit Market Barriers Exist for Minority and Woman Entrepreneurs?" *Center for Policy Research, Syracuse University*.

<sup>67</sup> The denial rates represent the proportion of business owners whose loan applications over the previous three years were always denied, compared to business owners whose loan applications were always approved or sometimes approved.

Hispanic white male-owned businesses that reported being denied loans. (Loan denial statistics on individual minority groups in the Mountain region are not reported in Figure G-6 due to relatively small sample sizes.)

Figure G-6.  
Business loan denial rates, 2003



Note: \*, \*\* Denote that the difference in proportions from non-Hispanic white for the given year is statistically significant at the 90% or 95% confidence level, respectively.

Source: Keen Independent Research from 2003 Survey of Small Business Finances.

**Other researchers' regression analyses of loan denial rates.** Several studies have investigated whether disparities in loan denial rates for different racial/ethnic and gender groups exist after controlling for other factors that affect loan approvals. Study results include the following:

- Commercial banks are less likely to loan to African American-owned businesses than to non-Hispanic white-owned businesses after statistically controlling for other factors.<sup>68</sup>
- African American, Asian American and Hispanic American men are more likely to be denied loans than non-Hispanic white men. However, African American borrowers are more likely to apply for loans.<sup>69</sup>
- Disparities in loan denial rates between African American-owned and non-Hispanic white-owned businesses tend to decrease with increasing competitiveness of lender markets. A similar phenomenon is observed when considering differences in loan denial rates between male- and female-owned businesses.<sup>70</sup>

<sup>68</sup> Cavalluzzo, Ken, Linda Cavalluzzo and John Wolken. 2002. "Competition, Small Business Financing and Discrimination: Evidence from a New Survey." *Journal of Business*. 75: 641-679.

<sup>69</sup> Coleman, Susan. 2002. "Characteristics and Borrowing Behavior of Small, Women-owned Firms: Evidence from the 1998 National Survey of Small Business Finances." *The Journal of Business and Entrepreneurship*. 151-166.

<sup>70</sup> Cavalluzzo, 2002. "Competition, Small Business Financing and Discrimination: Evidence from a New Survey."



- The probability of loan denial decreases with greater personal wealth. However, accounting for personal wealth does not account for the large differences in denial rates across African American-, Hispanic American-, Asian American-, and non-Hispanic white-owned businesses. Specifically, information about personal wealth explained some differences between Hispanic- and Asian American-owned businesses and non-Hispanic white-owned businesses, but they explained almost none of the differences between African American-owned businesses and non-Hispanic white-owned businesses.<sup>71</sup>
- Loan denial rates are higher for African American-owned businesses than for non-Hispanic white-owned businesses after accounting for several factors such as creditworthiness and other characteristics. That result is largely insensitive to different model specifications. Consistent evidence on loan denial rates and other indicators of discrimination in credit markets was not found for other minorities or for women.<sup>72</sup>
- Women-owned businesses are no less likely to apply or to be approved for loans in comparison to male-owned businesses.<sup>73</sup>
- A recent study using Kauffman Firm Survey data found that black/Hispanic-owned firms had a lower probability of loan approval than non-Hispanic white-owned firms in 2007, 2008, 2009 and 2010 even after accounting for firm and owner characteristics. In 2010, Asian-owned firms were also less likely to be approved. Women-owned firms had a lower likelihood of loan approval than male-owned firms, but only for 2008.<sup>74</sup>

**Regression model for denial rates in the SSBF.** Keen Independent developed regression models to explore the relationships between loan denial and the race, ethnicity and gender of business owners while statistically controlling for other factors. As discussed above, there is extensive literature on business loan denials that provides the theoretical basis for the regression models. Many studies have used probit econometric models to investigate the effects of various owner, business, and loan characteristics on the likelihood of loan denial. They include three general categories of variables:

- Owners' demographic characteristics (including race and gender), credit, and resources (13 variables);
- Business characteristics and credit and financial health (26 variables); and
- The environment in which businesses and lenders operate and characteristics of the loans (19 variables).<sup>75</sup>

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<sup>71</sup> Cavalluzzo, Ken and John Wolken. 2002. "Small Business Turndowns, Personal Wealth and Discrimination." *FEDS Working Paper No. 2002-35*.

<sup>72</sup> Blanchflower, David G., Phillip B. Levine and David J. Zimmerman. 2003. "Discrimination in the Small Business Credit Market." *The Review of Economics and Statistics*. 85:930-943.

<sup>73</sup> Coleman. 2002. "Characteristics and Borrowing Behavior of Small, Women-owned Firms: Evidence from the 1998 National Survey of Small Business Finances."

<sup>74</sup> Robb, Alicia. 2012. "Access to Capital among Young firms, Minority-owned Firms, Women-owned Firms, and High-tech Firms." U.S. Small Business Administration.

<sup>75</sup> See, for example, Blanchard, Lloyd; Zao, Bo and John Yinger. 2005. "Do Credit Barriers Exist for Minority and Women Entrepreneurs?" *Center for Policy Research, Syracuse University*.

After excluding observations where loan denial was imputed, businesses where no individual held at least 10 percent ownership and businesses where the largest shareholders were firms, the 2003 national sample included 1,854 businesses that had applied for a loan during the three years preceding the 2003 SSBF.

Given the relatively small sample size for the Mountain region (156 businesses) and the large number of variables in the model, Keen Independent included all U.S. businesses in the model and estimated any Mountain region effects by including regional control variables — an approach commonly used in other studies that analyze SSBF data.<sup>76</sup> The regional variables include an indicator variable for businesses located in the Mountain region and interaction variables that represent businesses owned by minorities or women that are located in the Mountain region.<sup>77</sup>

Figure G-7 on the following page presents the marginal effects from the probit model predicting loan denials. The dependent variable represented whether a company's loan applications over the past three years were always denied. The results from the model indicate that a number of race- and gender-neutral factors significantly affect the probability of loan denial.

The following characteristics were associated with a *higher* probably of loan denial:

- High-risk credit score for the business;
- Having one or more delinquent business transactions within the past 3 years; and
- Being in the transportation, communications and utilities industry.

The following characteristics were associated with a *lower* probably of loan denial:

- Being an inherited businesses or older businesses;
- Having an existing line of credit or savings account; and
- Applying for business mortgages and vehicle.

After statistically controlling for race- and gender-neutral influences, Keen Independent observed that businesses owned by African Americans were more likely to have their loans denied than other businesses.

The indicator variable for the Mountain region and the interaction terms for Mountain region and status as a minority- or female-owned business were not statistically significant. That result indicates that the probability of loan denials for minority- and women-owned businesses within the Mountain region is not significantly different from the U.S. as a whole after accounting for other factors.

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<sup>76</sup> Blanchflower, David G.; Levine, Phillip B. and David J. Zimmerman. 2003. "Discrimination in the Small-Business Credit Market." *The Review of Economics and Statistics*. 85(4): 930-943; NERA Economic Consulting. 2008. "Race, Sex, and Business Enterprise: Evidence from the City of Austin." *Prepared for the City of Austin, Texas*; and CRA International. 2007. "Measuring Minority- and Woman-Owned Construction and Professional Service Firm Availability and Utilization. *Prepared for Santa Clara Valley Transportation Authority*.

<sup>77</sup> Keen Independent also considered an interaction variable to represent firms that are both minority and female but the term was not significant.

Figure G-7.

Likelihood of business loan denial (probit regression) in the U.S. in the 2003 SSBF,  
Dependent variable: loan denial

| Variable   | Marginal effect | Variable   | Marginal effect | Variable  | Marginal effect |
|--|-----------------|--|-----------------|---|-----------------|
| <b>Race/ethnicity and gender</b>                     |                 | <b>Firm's characteristics, credit and financial health</b> |                 | <b>Firm and lender environment and loan characteristics</b> |                 |
| African American                                     | 0.068 **        | D&B credit score = moderate risk                           | -0.012          | Partnership   | 0.010           |
| Asian American                                       | -0.013          | D&B credit score = average risk                            | 0.030           | S corporation   | 0.026           |
| Hispanic American                                    | -0.011          | D&B credit score = significant risk                        | 0.015           | C corporation   | 0.027           |
| Native American                                      | 0.032           | D&B credit score = high risk                               | 0.041 *         | Construction industry                                       | 0.032           |
| Other minority                                       | 0.031           | Total employees  | 0.000           | Manufacturing industry                                      | 0.025           |
| Female   | 0.010           | Percent of business owned by principal                     | 0.000           | Transportation, communications and utilities industry       | 0.093 **        |
| Mountain region                                      | -0.008          | Family-owned business                                      | -0.022          | Finance, insurance and real estate industries               | 0.014           |
| Minority in Mountain region                          | -0.005          | Firm purchased   | 0.002           | Engineering industry  | 0.015           |
| Female in Mountain region                            | 0.003           | Firm inherited   | -0.169 **       | Other industry  | 0.022           |
| <b>Owner's characteristics, credit and resources</b> |                 | Firm age   | -0.001          | Herfindahl index = .10 to .18                               | 0.019           |
| Age  | 0.000           | Firm has checking account                                  | -0.031          | Herfindahl index = .18 or above                             | 0.034           |
| Owner experience                                     | 0.001           | Firm has savings account                                   | -0.031 *        | Located in MSA  | 0.031           |
| Some college   | 0.005           | Firm has line of credit                                    | -0.089 **       | Sales market local only                                     | 0.015           |
| Four-year degree                                     | 0.008           | Existing capital leases                                    | -0.009          | Loan amount   | 0.000           |
| Advanced degree                                      | -0.024          | Existing mortgage for business                             | 0.005           | Capital lease application                                   | -0.033          |
| Log of Home Equity                                   | 0.001           | Existing vehicle loans                                     | 0.016           | Business mortgage application                               | -0.045 *        |
| Owner has negative net worth                         | 0.074           | Existing equipment loans                                   | -0.015          | Vehicle loan application                                    | -0.159 **       |
| Bankruptcy in past 7 years                           | 0.056           | Existing loans from stockholders                           | 0.025           | Equipment loan application                                  | -0.023          |
| Judgement against in past 3 years                    | 0.025           | Other existing loans                                       | 0.024           | Loan for other purposes                                     | -0.019          |
| Log of net worth excluding home                      | -0.001          | Firm used trade credit in past year                        | -0.006          |   |                 |
|  |                 | Log of total sales in prior year                           | 0.005           |   |                 |
|  |                 | Log of cost of doing business in prior year                | -0.008          |   |                 |
|  |                 | Log of total assets  | -0.002          |   |                 |
|  |                 | Log of total equity  | -0.001          |   |                 |
|  |                 | Firm bankruptcy in past 7 years                            | -0.066          |   |                 |
|  |                 | Firm delinquency in business transactions                  | 0.037 **        |   |                 |

Note: \* Statistically significant at 90% confidence level.

\*\* Statistically significant at 95% confidence level.

For ease of interpretation the marginal effects of the probit coefficients are displayed in the figure. Significance is calculated using chi-square test statistics from the probit coefficients associated with the marginal effects.

"Less than high school education," "Negative total assets," "Negative sales in prior year" and "Mining industry" perfectly predicted loan outcome and dropped out of the regression;

"Negative total equity" dropped because of collinearity.

Source: Keen Independent Research analysis of 2003 SSBF data.

Keen Independent simulated loan approval rates for African American-owned businesses by comparing observed approval rates with simulated approval rates. “Loan approval” means that a business owner always, or at least sometimes, had his or her business loan applications approved over the previous three years. “Rates” of loan approval means the percentage of businesses that received loan approvals (always or sometimes) during that time period. Approval rates were calculated by subtracting the denial rate from 100 (e.g., a denial rate of 40% would indicate an approval rate of 60%).

The probit modeling approach allowed for simulations of loan approval rates for African American-owned businesses as if they had the same probability of loan approval as similarly situated non-Hispanic white male-owned businesses. To conduct the simulation, Keen Independent took the following steps:

- Performed a probit regression analysis predicting loan approval using only non-Hispanic white male-owned businesses in the dataset.<sup>78</sup>
- Used the coefficients from that model and the mean characteristics of African American-owned businesses (including the effects of a business being in the Mountain region) to estimate the probability of loan approval of that group.

Based on 2003 SSBF data, the actual loan approval rate for African American-owned businesses was 49 percent. Model results showed that African American-owned businesses would have an approval rate of about 70 percent if they were approved for loans at the same rate as similarly-situated non-Hispanic white male-owned businesses (disparity index of 70). The index of 70 suggests a substantial disparity between the actual loan approval rate and the rate for African American-owned businesses that might be expected for similarly-situated non-Hispanic white male-owned businesses. Figure G-8 presents these results.

Figure G-8.  
Comparison of actual loan approval rates to simulated loan approval rates, 2003

| Group            | Loan approval rates |           | Disparity index<br>(100 = parity) |
|------------------|---------------------|-----------|-----------------------------------|
|                  | Actual              | Benchmark |                                   |
| African American | 49.1%               | 69.8%     | 70                                |

Note: Actual approval rates presented here may differ from denial rates in Figure G-6 because some observations were excluded from the probit regression.

“Loan approval” means that a business owner always or at least sometimes had his or her business loan applications approved over the previous three years.

Source: Keen Independent Research analysis of 2003 SSBF data.

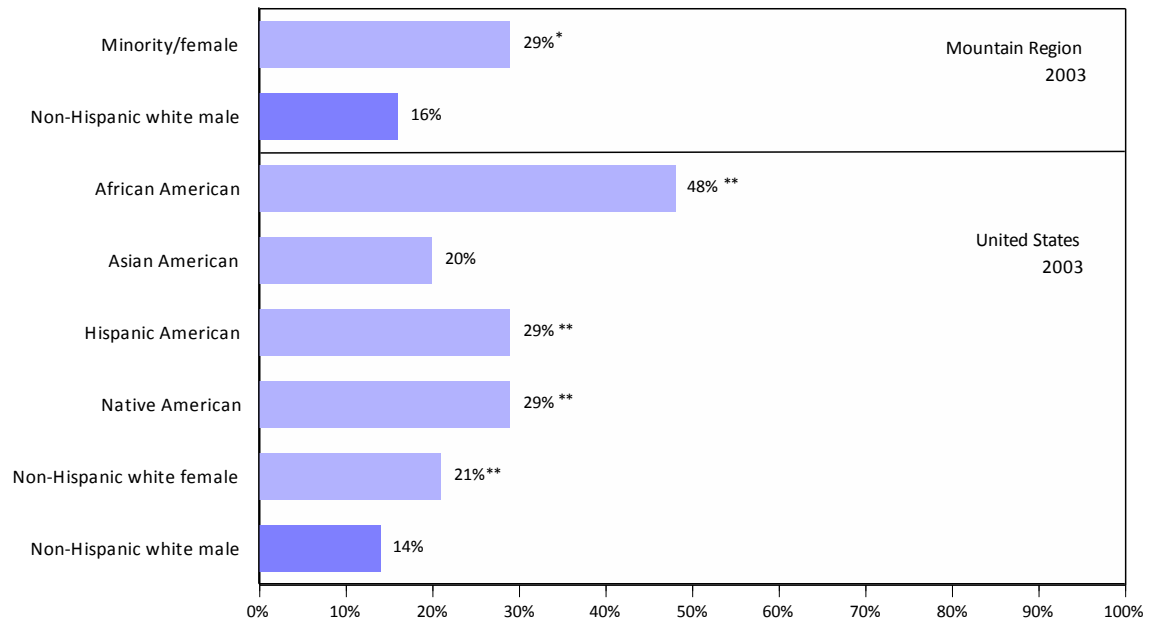
<sup>78</sup> That version of the model excluded the race/ethnicity and gender indicator variables, because the value of all of those variables would be the same (i.e., 0).

**Applying for loans.** Fear of loan denial can be a barrier to business credit in the same way that actual loan denial presents a barrier. The SSBF includes a question that gauges whether a business owner did not apply for a loan due to fear of loan denial. Using data from the 2003 SSBF, Figure G-9 presents the percentage of businesses that reported needing credit but did not apply for loans because of fears of denial.

In the Mountain region, minority- and women-owned businesses that reported needing loans were about twice as likely as non-Hispanic white-owned firms to say that they did not apply for those loans because of fear of loan denial (statistically significant difference).

The bottom portion of figure G-9 shows national results for fear of loan denial by race, ethnicity and gender of the business owners. Nationwide, African American, Hispanic American and Native American business owners were more likely to forgo applying for business loans due to a fear of denial compared to non-Hispanic white male-owned businesses (statistically significant differences). Non-Hispanic white women-owned businesses were also more likely to forgo applying for loans due to a fear of denial (also a statistically significant difference).

**Figure G-9.**  
Businesses that needed loans but did not apply due to fear of denial, 2003



Note: \*, \*\* Denote that the difference in proportions from non-Hispanic white male-owned businesses is statistically significant at the 90% or 95% confidence level, respectively.

Source: Keen Independent Research from 2003 Survey of Small Business Finances.

**Other researchers' regression analyses of fear of denial.** Other studies have identified factors that influence the decision to apply for a loan, such as business size, business age, owner age, and educational attainment. Accounting for those factors can help in determining whether race/ethnicity or gender of business owners explains whether owners did not apply for a loan due to fear of loan denial. Results indicate that:

- African American and Hispanic American business owners are significantly less likely to apply for loans due to fear of denial.<sup>79</sup>
- After statistically controlling for educational attainment, there were no differences in loan application rates between non-Hispanic white, African American, Hispanic American, and Asian American male business owners.<sup>80</sup>
- African American-owned businesses were more likely than other businesses to report being seriously concerned with credit markets and were less likely to apply for credit in fear of loan denial.<sup>81</sup>
- A Small Business Administration study found that African American- and Hispanic American-owned firms were less likely to apply for credit when needed for fear of having the loan application denied than non-Hispanic white-owned firms in 2007, 2008, 2009 and 2010 after accounting for firm and owner characteristics. Women-owned firms were less likely than male-owned firms to apply for loans for fear of denial in 2008, 2009 and 2010.<sup>82</sup>

**Regression model for fear of denial in the SSBF.** Keen Independent conducted its own econometric analysis of fear of denial by developing a model to explore the relationships between fear of denial and the race/ethnicity and gender of businesses owners while statistically controlling for other factors. The model was similar to the probit regression for likelihood of denial except that the fear of denial model included business owners who did not apply for a loan and excluded loan characteristics.

After excluding observations where fear of denial was imputed, businesses where no individual held at least 10 percent ownership and businesses where the largest shareholders were firms, the 2003 national sample included 4, 173 businesses (321 of which were in the Mountain region). Similar to the likelihood of denial model, Mountain region effects are modeled using regional control variables in the national model.<sup>83</sup>

Figure G-10 presents the marginal effects from the probit model predicting the likelihood that a business needs credit but will not apply for a loan due to fear of denial. The results from the model indicate that a number of race- and gender-neutral factors significantly affect the probability of forgoing application for a loan due to fear of denial.

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<sup>79</sup> Cavalluzzo, 2002. "Competition, Small Business Financing and Discrimination: Evidence from a New Survey."

<sup>80</sup> Coleman, Susan. 2004. "Access to Debt Capital for Small Women- and Minority-Owned Firms: Does Educational Attainment Have an Impact?" *Journal of Developmental Entrepreneurship*. 9:127-144.

<sup>81</sup> Blanchflower et al., 2003. Discrimination in the Small Business Credit Market.

<sup>82</sup> Robb, Alicia. 2012. "Access to Capital among Young firms, Minority-owned Firms, Women-owned Firms, and High-tech Firms." U.S. Small Business Administration.

<sup>83</sup> Again, Keen Independent considered an interaction variable to represent firms that are both minority and female but the term was not significant.

Factors that are associated with a *higher* likelihood of not applying for a loan due to fear of loan denial include:

- The business owner having had a judgment against the business in the past 3 years;
- The business having a significant or high risk credit score;
- A larger percentage of business owned by the principal owner;
- The business having an existing mortgage, existing vehicle loans, existing loans from stockholders or other existing loans;
- Having one or more delinquent business transactions (60 days or more) within the past 3 years; and
- Location in a metropolitan area.

Factors that are associated with a *lower* likelihood of not applying for a loan due to fear of loan denial include:

- The business owner being older and having either a four-year college degree or an advanced degree;
- More equity in the business owner's home — if he or she is a homeowner — and more business owner net worth (excluding the business owner's home);
- Being an older business;
- More sales in the prior year;
- Greater firm equity;
- Being in the transportation, communications and utilities industry; and
- Having a local (as opposed to regional, national or international) sales market.

After statistically controlling for race- and gender-neutral influences, African American-owned firms and female-owned businesses were more likely to forgo applying for a loan due to fear of denial. Results for minority- and women-owned businesses within the Mountain region were not significantly different from the U.S. as a whole after accounting for other factors.

Figure G-10.

Likelihood of forgoing a loan application due to fear of denial (probit regression) in the U.S. in the 2003 SSBF,

Dependent variable: needed a loan but did not apply due to fear of denial

| Variable   | Marginal effect | Variable   | Marginal effect | Variable  | Marginal effect |
|--|-----------------|--|-----------------|---|-----------------|
| <b>Race/ethnicity and gender</b>                     |                 | <b>Firm's characteristics, credit and financial health</b> |                 | <b>Firm and lender environment and loan characteristics</b> |                 |
| African American                                     | 0.118 **        | D&B credit score = moderate risk                           | -0.004          | Partnership   | -0.012          |
| Asian American                                       | 0.026           | D&B credit score = average risk                            | 0.027           | S corporation   | 0.002           |
| Hispanic American                                    | 0.042           | D&B credit score = significant risk                        | 0.041 *         | C corporation   | 0.007           |
| Native American                                      | 0.027           | D&B credit score = high risk                               | 0.079 **        | Construction industry                                       | 0.018           |
| Other minority                                       | 0.079           | Total employees  | 0.000           | Manufacturing industry                                      | -0.010          |
| Female   | 0.028 *         | Percent of business owned by principal                     | 0.001 **        | Transportation, communications and utilities industry       | -0.071 **       |
| Mountain region                                      | 0.006           | Family-owned business                                      | -0.009          | Finance, insurance and real estate industries               | 0.020           |
| Minority in Mountain region                          | -0.055          | Firm purchased   | -0.009          | Engineering industry  | -0.010          |
| Female in Mountain region                            | 0.014           | Firm inherited   | -0.037          | Other industry  | 0.005           |
| <b>Owner's characteristics, credit and resources</b> |                 | Firm age   | -0.002 **       | Herfindahl index = .10 to .18                               | -0.009          |
| Age  | -0.003 **       | Firm has checking account                                  | 0.026           | Herfindahl index = .18 or above                             | 0.015           |
| Owner experience                                     | 0.001           | Firm has savings account                                   | 0.013           | Located in MSA  | 0.049 **        |
| Less than high school education                      | 0.055           | Firm has line of credit                                    | -0.008          | Sales market local only                                     | -0.045 **       |
| Some college   | 0.002           | Existing capital leases                                    | 0.030           |   |                 |
| Four-year degree                                     | -0.037 **       | Existing mortgage for business                             | 0.042 **        |   |                 |
| Advanced degree                                      | -0.033 *        | Existing vehicle loans                                     | 0.032 **        |   |                 |
| Log of home equity                                   | -0.005 **       | Existing equipment loans                                   | 0.020           |   |                 |
| Owner has negative net worth                         | -0.007          | Existing loans from stockholders                           | 0.058 **        |   |                 |
| Bankruptcy in past 7 years                           | 0.153 **        | Other existing loans                                       | 0.077 **        |   |                 |
| Judgement against in past 3 years                    | 0.129 **        | Firm used trade credit in past year                        | 0.012           |   |                 |
| Log of net worth excluding home                      | -0.009 **       | Log of total sales in prior year                           | -0.017 **       |   |                 |
|  |                 | Negative sales in prior year                               | -0.119          |   |                 |
|  |                 | Log of cost of doing business in prior year                | 0.009           |   |                 |
|  |                 | Log of total assets  | 0.000           |   |                 |
|  |                 | Log of total equity  | -0.004 **       |   |                 |
|  |                 | Firm bankruptcy in past 7 years                            | 0.093           |   |                 |
|  |                 | Firm delinquency in business transactions                  | 0.115 **        |   |                 |

Note: \* Statistically significant at 90% confidence level.

\*\* Statistically significant at 95% confidence level.

For ease of interpretation the marginal effects of the probit coefficients are displayed in the figure. Significance is calculated using chi-square statistics from the probit coefficients associated with the marginal effects.

"Mining industry" and "Negative total assets" perfectly predicted loan outcome and dropped out of the regression; "Negative total equity" dropped because of collinearity.

Source: Keen Independent Research analysis of 2003 SSBF data.

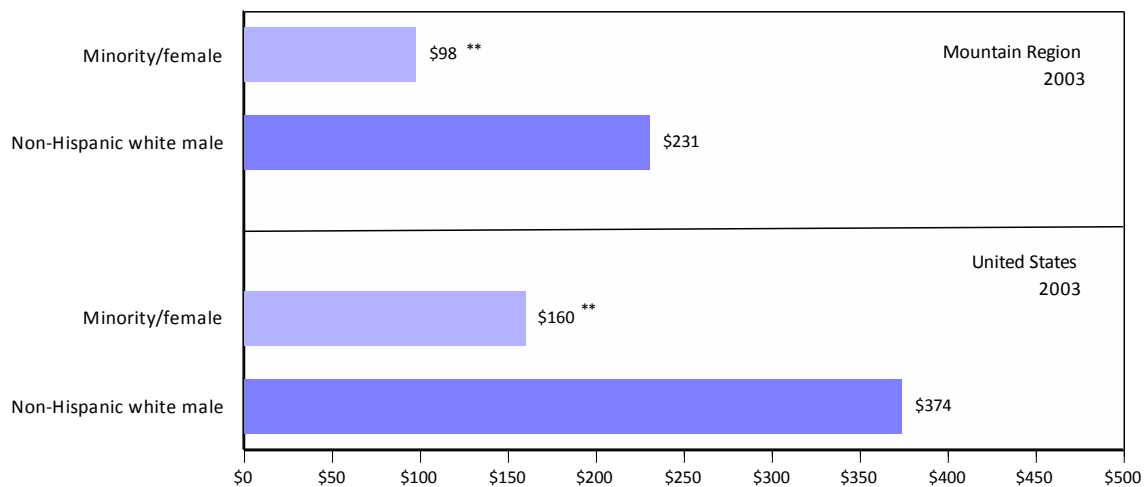


**Loan values.** Keen Independent also considered average loan values for businesses that received loans. Results from the 2003 SSBF for mean loan values issued to different racial/ethnic and gender groups are presented in Figure G-11.

Comparisons of loan amounts between non-Hispanic white male-owned businesses and minority- and women-owned businesses indicated the following:

- Among firms in the Mountain region that obtained loans, minority- and women-owned businesses received loans that averaged about \$98,000. Majority-owned firms received loans that averaged about \$231,000. In sum, minority- and women-owned firms received loans that, on average, were less than one-half the size of loans received by majority-owned firms.
- The disparity in average loan value for minority- and women-owned firms was also evident for the nation, as shown below.

**Figure G-11.**  
Mean value of approved business loans, in thousands, 2003



Note: \*, \*\* Denote that the difference in proportions from non-Hispanic white male-owned businesses is statistically significant at the 90% or 95% confidence level, respectively.

Source: Keen Independent Research from 2003 Survey of Small Business Finances.

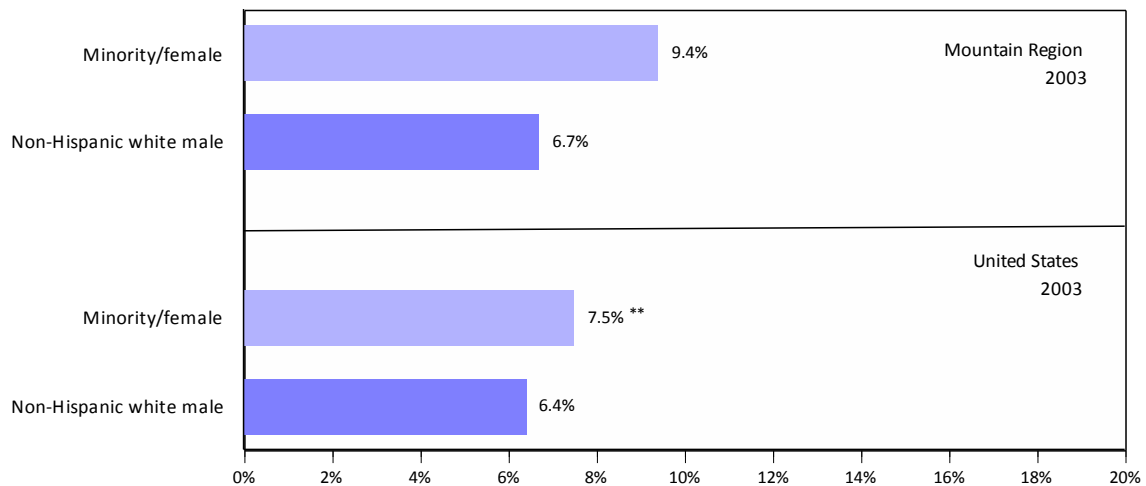
Previous national studies have found that African American-owned businesses are issued loans that are smaller than loans issued to non-Hispanic white-owned businesses with similar characteristics. Examination of construction companies in the United States have also revealed that African American-owned businesses are issued loans that are worth less than loans issued to businesses with otherwise identical characteristics.<sup>84</sup>

Keen Independent conducted further econometric analysis to explore the relationships between loan amounts and the race/ethnicity and gender of business owners while statistically controlling for other factors but the results were not conclusive.

<sup>84</sup> Grown. 1991. "Commercial Bank Lending Practices and the Development of Black-Owned Construction Companies."

**Interest rates.** Figure G-12 presents average interest rates on commercial loans received by the race/ethnicity of business owners, based on 2003 SSBF data. In 2003, the average interest rate on loans issued to minority- and women-owned businesses in the United States appeared to be higher (by 1.1 percentage points) than the mean interest rate of loans for non-Hispanic white male-owned businesses. A greater disparity is reflected in the Mountain region data (2.7 percentage points). Due to small sample size, the difference for businesses in the Mountain region was not statistically significant.

**Figure G-12.**  
Mean interest rate for business loans, 2003



Note: \*, \*\* Denote that the difference in proportions from non-Hispanic white male-owned businesses is statistically significant at the 90% or 95% confidence level, respectively.

Source: Keen Independent Research from 2003 Survey of Small Business Finances.

**Other researchers' regression analyses of interest rates.** Previous studies have investigated differences in interest rates across race/ethnicity and gender while statistically controlling for factors such as individual credit history, business credit history, and Dun and Bradstreet credit scores. Findings from those studies include the following:

- Hispanic American-owned businesses had significantly higher interest rates for lines of credit in places with less credit market competition. However, the study found no evidence that African American- or female-owned businesses received higher rates.<sup>85</sup>
- Among a sample of businesses with no past credit problems, African American-owned businesses had significantly higher interest rates on approved loans than other groups.<sup>86</sup>

**Regression model for interest rates in the SSBF.** Keen Independent conducted a regression analysis using data from the 2003 SSBF to explore the relationships between interest rates and the race, ethnicity and gender of business owners. The study team developed a linear regression model using the same control variables as the likelihood of denial model along with additional characteristics of

<sup>85</sup> Cavalluzzo. 2002. "Competition, Small Business Financing and Discrimination: Evidence from a New Survey."

<sup>86</sup> Blanchflower. 2003. "Discrimination in the Small Business Credit Market."

the loan received, such as whether the loan was guaranteed, if collateral was required, the length of the loan, and whether the interest rate was fixed or variable.

The national sample for analysis of interest rates included 1,474 businesses that received a loan in the previous three years and the Mountain region included 120 such businesses.<sup>87</sup> Again, Mountain region effects were modeled using regional control variables.<sup>88</sup>

Figure G-13 presents the coefficients from the linear regression model. The results indicate that a number of race- and gender-neutral factors have a statistically significant effect on interest rates, including the following factors:

- Business owner having negative net worth is associated with a higher interest rate;
- High risk credit scores are associated with higher interest rates (by approximately 1 percentage point);
- Having existing vehicle loans is associated with higher interest rates;
- Being in the transportation, communications, and utilities industry is associated with higher interest rates;
- Vehicle loans and loans for purposes other than equipment, capital lease and business mortgage are associated with lower interest rates;
- Loans requiring a personal guarantee, cosigner or other guarantor are associated with lower interest rate;
- Collateral requirements are associated with lower interest rates;
- Longer loans are associated with lower interest rates; and
- Fixed rate loans are associated with higher interest rates than variable rate loans.

After statistically controlling for race- and gender-neutral influences, the study team observed that African American-owned businesses received loans with interest rates approximately 2 percentage points higher than non-Hispanic white-owned businesses. Hispanic American-owned businesses received loans with interest rates approximately 1 percentage point higher than non-Hispanic white-owned businesses. These differences were not statistically significant.

Being in the Mountain region did not have a statistically significant impact on interest rates.

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<sup>87</sup> After excluding a small number of observations where the interest rate was imputed.

<sup>88</sup> Keen Independent considered an interaction variable to represent businesses that are both minority- and female-owned but the term was not significant.

Figure G-13.

Interest rate (linear regression) in the U.S. in the 2003 SSBF,  
Dependent variable: interest rate on most recent approved loan

| Variable   | Coefficient | Variable   | Coefficient | Variable  | Coefficient |
|--|-------------|--|-------------|---|-------------|
| <b>Race/ethnicity and gender</b>                     |             | <b>Firm's characteristics, credit and financial health</b> |             | <b>Firm and lender environment and loan characteristics</b> |             |
| Constant   | 9.755 **    | D&B credit score = moderate risk                           | 0.249       | Partnership   | -0.197      |
| African American                                     | 1.805       | D&B credit score = average risk                            | 0.132       | S corporation   | -0.152      |
| Asian American                                       | 0.113       | D&B credit score = significant risk                        | 0.334       | C corporation   | -0.047      |
| Hispanic American                                    | 0.781       | D&B credit score = high risk                               | 0.877 **    | Mining industry   | -0.014      |
| Native American                                      | -0.081      | Total employees  | -0.003      | Construction industry                                       | -0.501      |
| Other minority                                       | -1.225      | Percent of business owned by principal                     | 0.002       | Manufacturing industry                                      | -0.162      |
| Female   | -0.227      | Family-owned business                                      | -0.442      | Transportation, communications and utilities industry       | 0.995 **    |
| Mountain region                                      | 0.118       | Firm purchased   | 0.000       | Finance, insurance and real estate industries               | -0.141      |
| Minority in Mountain region                          | 0.281       | Firm inherited   | 0.210       | Engineering industry  | 0.543       |
| Female in Mountain region                            | 1.007       | Firm age   | -0.007      | Other industry  | 0.502 *     |
| <b>Owner's characteristics, credit and resources</b> |             | Firm has checking account                                  | 0.220       | Herfindahl index = .10 to .18                               | 0.589       |
| Age  | -0.014      | Firm has savings account                                   | -0.002      | Herfindahl index = .18 or above                             | 0.859       |
| Owner experience                                     | -0.002      | Firm has line of credit                                    | -0.296      | Located in MSA  | -0.006      |
| Less than high school education                      | 0.734       | Existing capital leases                                    | 0.214       | Sales market local only                                     | -0.101      |
| Some college   | 0.373       | Existing mortgage for business                             | 0.070       | Approved Loan amount  | 0.000       |
| Four-year degree                                     | -0.227      | Existing vehicle loans                                     | 0.430 **    | Capital lease application                                   | 1.061       |
| Advanced degree                                      | -0.337      | Existing equipment loans                                   | 0.404       | Business mortgage application                               | -0.256      |
| Log of home equity                                   | 0.007       | Existing loans from stockholders                           | 0.039       | Vehicle loan application                                    | -1.720 **   |
| Owner has negative net worth                         | 5.505 **    | Other existing loans                                       | 0.438       | Equipment loan application                                  | -0.439      |
| Bankruptcy in past 7 years                           | 0.684       | Firm used trade credit in past year                        | 0.203       | Loan for other purposes                                     | -1.204 **   |
| Judgement against in past 3 years                    | -0.304      | Log of total sales in prior year                           | -0.135      | Loan guaranteed   | -0.391 *    |
| Log of net worth excluding home                      | 0.019       | Negative sales in prior year                               | -1.673      | Collateral required   | -0.791 **   |
|  |             | Log of cost of doing business in prior year                | -0.132      | Length of loan (months)                                     | -0.003 *    |
|  |             | Log of total assets  | -0.019      | Fixed rate  | 1.385 **    |
|  |             | Log of total equity  | 0.000       |   |             |
|  |             | Firm bankruptcy in past 7 years                            | -0.851      |   |             |
|  |             | Firm delinquency in business transactions                  | -0.133      |   |             |

Note: \* Statistically significant at 90% confidence level.

\*\* Statistically significant at 95% confidence level.

"Owner has negative net worth" and "Negative total assets" dropped out of the regression because of collinearity.

Source: Keen Independent Research analysis of 2003 SSBF data.

**Small business lending after the Great Recession.** The financial landscape has changed substantially since the beginning of the Great Recession. Bank lending fell significantly from the end of 2008 through 2010. Data from the Federal Reserve show commercial and industrial loans and leases peaked at \$1.6 trillion at the end of 2008 and fell to \$1.2 trillion by the end of 2010, a decline of about 25 percent.<sup>89</sup> Similar analyses show commercial and industrial loans and leases of less than \$1 million fell were down about 22 percent at the end of 2012 relative to second quarter of 2007.<sup>90</sup>

Bank tightening of lending standards has been greater for small businesses in recent years. While net tightening (percentage of banks tightening standards minus the percentage loosening standards) was positive for small and large loans in 2008 through 2010, in 2011 and 2012 positive net tightening existed only for small business loans. This tightening of the lending markets may have several effects on small businesses, including fewer startups as well as slower economic and employment growth for those already in existence. Longer term trends in small business financing may exacerbate recent economic disturbances. Data from the Federal Deposit Insurance Corporation (FDIC) show the share of all nonfarm, nonresidential loans of less than \$1 million has been declining since 1995.<sup>91</sup>

**Characteristics of small businesses loans after the Great Recession.** Research shows characteristics of small business loans have changed. The average small business loan has more than doubled since 2005, to about \$425,000. Qualitative research suggests this trend toward larger loans may be due to a greater push for profit maximization in the banking industry.<sup>92</sup> This may affect some minority business owners, particularly African American business owners. About 80 percent of African Americans that apply for SBA loans seek \$150,000 or less.<sup>93</sup>

**Characteristics of small businesses after the Great Recession.** Characteristics of small businesses have also changed considerably since 2007. Significantly fewer small businesses reported “good” cash flow in 2013 compared to 2007 (65 and 48 percent, respectively). Small business delinquencies have risen and consequently, more lending requires collateral. About 90 of small business lending in 2013 required some collateral, up from 84 percent in 2007. During this same period, the decline in housing prices nationwide has weakened owner net equity and made collateral requirements more difficult to meet.<sup>85</sup>

**Small business lending by race/ethnicity.** In fiscal year 2013, the U.S. Small Business Administration (SBA) administered about 23 billion in loans. Loans to African American business owners represented 382 million or 1.7 percent of the total, a substantial decline from 2008, when SBA allocated about 8 percent of total loan value to African American business owners. Hispanic American business owners received 4.7 percent of the loan total in 2013, relatively unchanged from 4.5 percent of the loan total in 2009.<sup>88</sup>

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<sup>89</sup> U.S. Board of Governors of the Federal Reserve System. 2014. “H.8 Assets and Liabilities of Commercial Banks in the United States.” Accessed Jun 15, 2014 from FRASER, <http://fraser.stlouisfed.org/publication/>.

<sup>90</sup> Ann Marie Wiersch and Scott Shane. 2013. “Why Small Business Lending Isn’t What It Used to Be.” Economic Commentary. Federal Reserve Bank of Cleveland.

<sup>91</sup> Ibid.

<sup>92</sup> CIT Group, once SBA’s top lender, no longer administers SBA loans. Other banks, including Bank of America, have significantly reduced SBA lending.

<sup>93</sup> Ruth Simon and Tom McGinty. 2014. “Loan Rebound Misses Black Businesses.” *The Wall Street Journal*. 14 March 2014.

**Results from Keen Independent 2014 availability interviews with firms in the Arizona transportation contracting industry.** At the close of the 2014 availability interviews conducted as part of the ADOT disparity study, the study team asked questions regarding potential barriers or difficulties in the firm might have experienced in the Arizona marketplace. The series of questions was introduced with the following statement: “Finally, we’re interested in whether your company has experienced barriers or difficulties associated with starting or expanding a business in your industry or with obtaining work. Think about your experiences within the past seven years as you answer these questions.” Respondents were then asked about specific potential barriers or difficulties.

For each potential barrier, the study team examined whether responses differed between minority-, women- and majority-owned firms. Figure G-14 on the following page presents results for questions related to access to capital, bonding and insurance.

**Access to lines of credit and loans.** The first question was, “Has your company experienced any difficulties in obtaining lines of credit or loans?” As shown in Figure G-14, 39 percent of MBEs and 25 percent of WBEs reported difficulties in obtaining lines of credit or loans. Only 15 percent of majority-owned firms reported similar difficulties.

**Receiving timely payment.** Need for business credit is, in part, linked to whether firms are paid for their work in a timely manner. In the availability interviews, Keen Independent asked, “Has your company experienced any difficulties receiving payment in a timely manner?” Figure G-14 shows that, regardless of ownership, about four out of ten firms have experienced difficulties receiving payment in a timely manner with little difference between MBE, WBE and majority-owned firms.

## **Bonding and Insurance**

Bonding is closely related to access to capital. Some national studies have identified barriers regarding MBE/WBEs and access to surety bonds for public construction projects.<sup>94</sup>

High insurance requirements on public sector projects may also represent a barrier for certain construction and engineering-related firms attempting to do business with government agencies. Keen Independent examined this issue as well.

**Bonding.** To research whether bonding represented a barrier for Arizona businesses, Keen Independent asked firms completing availability interviews:

- “Has your company obtained or tried to obtain a bond for a project?”
- [and if so] “Has your company had any difficulties obtaining bonds needed for a project?”

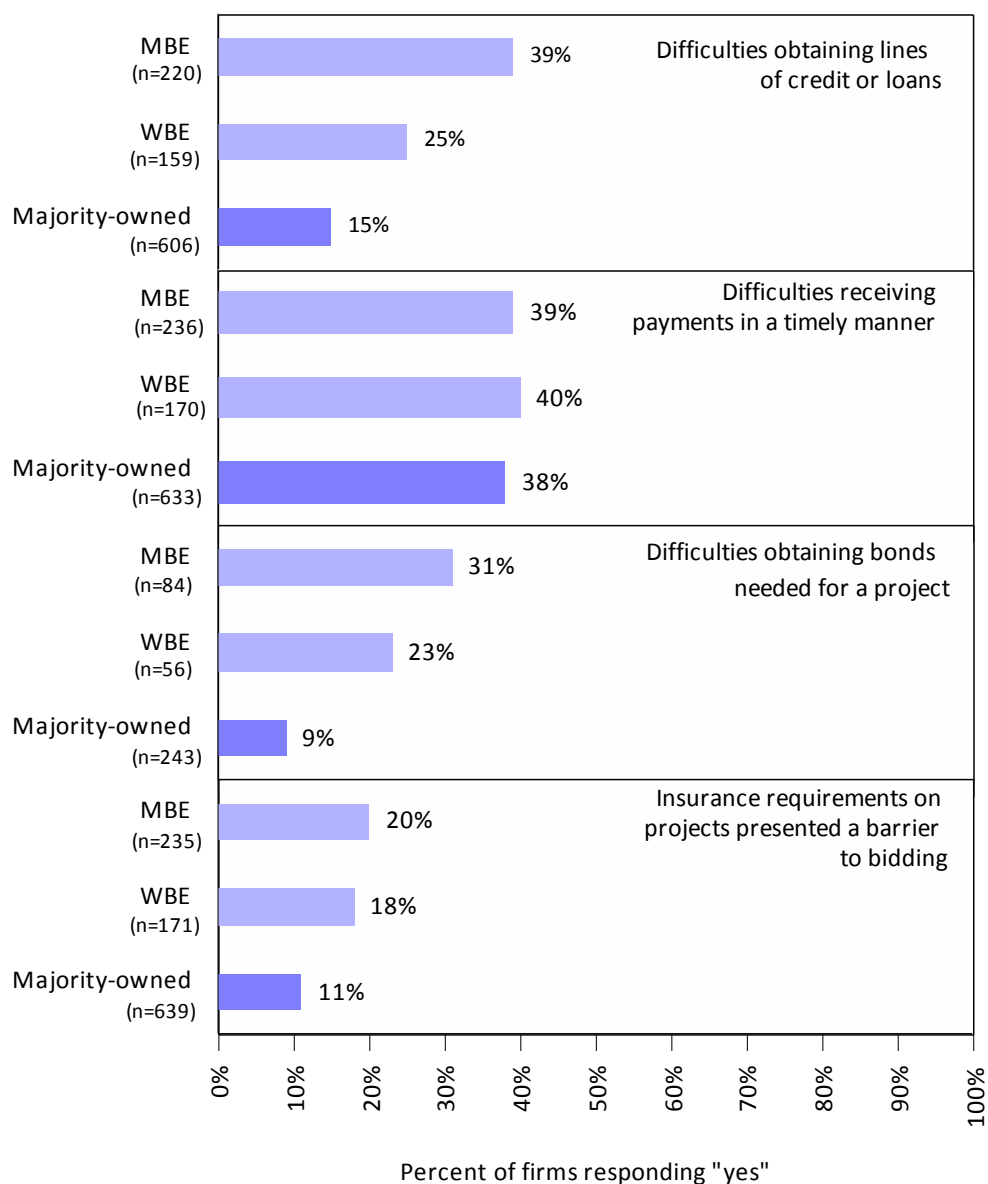
Figure G-14 presents these results from the 2014 availability interviews. About four in ten firms had obtained or tried to obtain a bond for a project, similar among MBEs, WBEs and majority-owned firms. Among those firms, 31 percent of MBEs and 23 percent of WBEs reported experiencing difficulties obtaining bonds needed for a project. Relatively fewer majority-owned firms (9%) reported difficulties obtaining the bonding needed for a project.

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<sup>94</sup> For example, Enchautegui, Maria E. et al. 1997. “Do Minority-Owned Businesses Get a Fair Share of Government Contracts?” *The Urban Institute*: 1-117, p. 56.

Figure G-14.

Responses to 2014 availability interview questions concerning loans, timely payments, bonding and insurance, Arizona MBE, WBE and majority-owned firms



Note: "WBE" represents white women-owned firms, "MBE" represents minority-owned firms and "Majority-owned" represents non-Hispanic white male-owned firms.

Source: Keen Independent Research from 2014 Availability Interviews.

**Insurance.** The study team also examined whether minority- and women-owned firms were more likely than majority-owned firms within the study area to report that “insurance requirements represented a barrier to bidding” (see Figure G-14).

About 20 percent of MBEs and 18 percent of WBEs interviewed indicated that insurance requirements on projects have presented a barrier to bidding. Relatively fewer majority-owned firms (11%) reported that insurance requirements presented a barrier to bidding on projects.

## Summary

There is evidence that minorities and women face certain disadvantages in accessing capital that is necessary to start, operate, and expand businesses. Capital is required to start companies, so barriers accessing capital can affect the number of minorities and women who are able to start businesses. In addition, minorities and women start business with less capital. A number of studies have demonstrated that lower startup capital adversely affects prospects for those businesses. Key results included the following.

Home equity is an important source of funds for business startup and growth.

- Fewer African Americans, Asian-Pacific Americans, Subcontinent Asian Americans, Hispanic Americans and Native Americans in Arizona own homes compared with non-Hispanic whites. These differences in homeownership rates were present prior to the Great Recession and persisted in 2008 through 2012.
- Native Americans, African Americans and Hispanic Americans in Arizona who do own homes tend to have lower home values than non-Hispanic whites. These differences were evident before and after the Great Recession.
- In 2007, high-income African Americans, Hispanic Americans, Native Americans, Asian Americans, and Native Hawaiian and other Pacific Islanders applying for home mortgages in Arizona were more likely than high-income non-Hispanic whites to have their applications denied. Except for Asian Americans, these disparities were also evident in 2012.
- Compared with non-Hispanic whites, subprime loans represented a greater proportion of Arizona conventional home purchase loans issued in 2007 for African Americans, Hispanic Americans, Native Americans, and Native Hawaiians and other Pacific Islanders. Although subprime rates dropped by 2012, disparities persisted for African Americans, Hispanic Americans and Native Americans.
- Compared with non-Hispanic whites, subprime loans were also a greater proportion of conventional home refinance loans for Hispanic Americans, African Americans, Native Americans, and Native Hawaiians and other Pacific Islanders in 2007. (By 2012, very few conventional refinance loans for any group were subprime.)



- Based on 2003 Survey of Small Business Finances data for the Mountain region, more minority- and women-owned small businesses were denied loans than non-Hispanic male-owned small businesses. There is evidence that African American small business owners were more likely to have been denied business loan applications than similarly situated non-Hispanic whites (disparity index of 70).
- Among small business owners who reported needing business loans, minority and female business owners in the Mountain region were nearly twice as likely as non-Hispanic white men to report that they did not apply due to fear of denial. There is evidence that African Americans and women were more likely to forgo applying for loans due to fear of denial compared with similarly-situated non-minorities and men.
- The mean value of approved loans for minority- and female-owned businesses in the Mountain region was less than one-half that for non-Hispanic white male-owned firms.
- There is evidence that minority- and women-owned small businesses in the Mountain region paid higher interest rates on their business loans than non-minority male-owned small businesses.
- In the availability interviews conducted as part of this study, minority- and women-owned firms were more likely to report experiencing difficulties in obtaining lines of credit or loans relative to majority-owned firms.
- Minority- and women-owned firms were more likely than majority-owned firms to report difficulties obtaining bonding.
- Minority- and women-owned firms were also more likely to report that insurance requirements on projects represented a barrier to bidding.